

# Age and Gender Effects on Coping in Children and Adolescents

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The aim of this study was to investigate age and gender effects of children's and adolescents' coping with common stressors in 3 age groups (late childhood, early, and middle adolescence). Furthermore, age and developmental differences in situation-specific coping with 2 stress domains were examined.  $N = 1,123$  participants (ages 8 to 13 years) were asked to complete the German Coping Questionnaire for Children and Adolescents (Hampel *et al.*, 2001) in response to both an interpersonal and an academic stressor. Adolescent boys and girls, as well as girls from all age ranges scored lower on adaptive and higher on maladaptive coping strategies. With regard to interaction effects, female early adolescents coped maladaptively with common stressors, showing a decreased employment of adaptive (e.g., distraction, positive self-instructions) and an enhanced use of maladaptive coping strategies (e.g., rumination, aggression). Situation-specific coping did not differ consistently with age and gender. Implications of the findings for mental health care and developing clinical treatment of children and adolescents are discussed.

**KEY WORDS:** stress; coping; children and adolescents.

## INTRODUCTION

Prior research has shown that children and adolescents are exposed to a variety of stressors (for review, see Fields and Prinz, 1997). Thereby, findings indicated that school-related stressors were most frequently reported, followed by interpersonal stressors such as conflicts with parents, siblings, and peers (de Anda *et al.*, 1997, 2000; Donaldson *et al.*, 2000; Spirito *et al.*, 1991). Further studies have found that those daily stressors were significantly related to psychological symptoms, whereas a weakened influence of major stressful events on chil-

dren's and adolescents' well-being has been demonstrated (Compas *et al.*, 1993; Seiffge-Krenke, 2000). Thus, it is stated that daily stressors, especially when experienced in a cumulative manner, are linked to psychological maladjustment (Compas *et al.*, 2001; Fields and Prinz, 1997; Seiffge-Krenke, 2000). Consistently, longitudinal studies with children and adolescents have found stress-related internalizing as well as externalizing behavioral problems such as depression or aggression (for reviews, see Compas *et al.*, 1993, 2001). de Anda and collaborates (1997) emphasized the remarkable rise in rates of adolescent suicide, depression, and substance abuse and concluded that the enhanced demands of present-day adolescents are reflected by this increase.

Further research on psychological distress and psychopathology has provided evidence for the significant moderating role of children's and adolescents' coping abilities (e.g., Compas *et al.*, 1993; Kraaij *et al.*, 2003). Thus, the conclusion can be drawn that a maladaptive coping style is a significant risk factor for the psychological development in children and adolescents (Compas *et al.*, 2001; Seiffge-Krenke, 1995; Wolchik and Sandler, 1997).

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### Operationalization of Coping

In the literature on coping among children and adolescents coping strategies were mostly dichotomized (for reviews, see Compas *et al.*, 2001; Fields and Prinz, 1997). Thus, concepts were provided distinguishing problem-focused from emotion-focused coping (Compas *et al.*, 1988), approach from avoidant coping (Roth and Cohen, 1986), and primary from secondary control coping (Rothbaum *et al.*, 1982). In general, problem-focused, approach, and primary control coping represent strategies directed towards modifying the stressful encounter or individual goals, and emotion-focused, avoidant, and secondary control coping reflect strategies directed towards regulating stress-related negative emotions. Moreover, a 3-factor-model derived by exploratory factor analysis was interpreted by distinguishing functional coping modes, which were subdivided in active and internal coping, from dysfunctional coping represented by withdrawal (Seiffge-Krenke, 1993, 2000). Similarly, the operationalization in this study was aimed to take the diversity of coping modes into consideration, also elaborating a 3-dimensional model of coping styles. On the basis of how the coping attempt is directed to the stressor, a maladaptive coping style and 2 adaptive coping styles were distinguished. The maladaptive coping style were represented by the strategies "passive avoidance," "rumination," "resignation," and "aggression." The 2 adaptive coping styles were interpreted in accordance with the classification of coping modes in emotion-focused and problem-focused coping strategies reported by Lazarus and Folkman (1984). Specifically, emotion-focused coping comprised the strategies "minimization" and "distraction/recreation," and problem-focused coping included the strategies "situation control," "positive self-instructions," and "support seeking". By using confirmatory factor analyses on 3 adolescent samples, Connor-Smith *et al.* (2000) did not confirm the dichotomy of problem-focused and emotion-focused coping, but provided a 5-factor-model, reflecting involuntary-voluntary coping as first dimension, and engagement-disengagement coping as 2nd dimension. Thereby, voluntary engagement coping was subdivided in primary and secondary control coping.

### Efficiency of Coping Strategies

Studies in children and adolescents have found that problem-focused coping was negatively related to psychological symptoms, whereas emotion-focused coping was positively correlated (Compas *et al.*, 1988). These associations were confirmed for approach and avoidant coping (Causey and Dubow, 1992). Moreover, in longi-

tudinal studies, the development of adolescent depression was predicted by low levels in approach and high levels in avoidant coping (Herman-Stahl *et al.*, 1995; Seiffge-Krenke and Klessinger, 2000; Seiffge-Krenke and Stemmler, 2002). Further research suggested that the efficiency of coping strategies was significantly influenced by the perceived controllability of stressors. Thus, more positive adjustment was shown when problem-focused coping was employed to deal with stressors which were perceived to be controllable (Compas *et al.*, 1988). In addition, emotion-focused coping applied on uncontrollable stressors was associated with fewer psychological symptoms. Thereby, in studies among children and adolescents, academic stressors were perceived to be controllable, whereas interpersonal stressors were perceived to be uncontrollable (Causey and Dubow, 1992; Compas *et al.*, 1988). These findings lend support to the notion that the efficiency of coping modes is determined by the match of coping strategies and perceived controllability of stressors (Boekaerts and Röder, 1999; Causey and Dubow, 1992; Compas *et al.*, 2001; Fields and Prinz, 1997; Griffith *et al.*, 2000).

In this study effects of gender and age (late childhood, early, and middle adolescence) on coping with 2 stress domains (interpersonal and academic stressors) were investigated. It was hypothesized that children and adolescents would employ more emotion-focused coping strategies in interpersonal stressors, and more problem-focused coping strategies in academic stressors.

### Age and Gender Effects on Coping

#### *Age Effects*

The majority of studies on developmental changes has found age-dependent increases in emotion-focused coping among children and adolescents, ages 5 to 17 years (e.g., Compas *et al.*, 1988; Frydenberg and Lewis, 1993), indicating that these coping strategies are underdeveloped in childhood. Further studies confirmed this assumption, showing that emotional regulating strategies, such as distraction and relaxation, were used less frequently in younger children (Rossman, 1992; Ryan, 1989). However, few studies in 9- to 14-year-old children and adolescents have found decreases in distraction with increasing age (Donaldson *et al.*, 2000; Spirito *et al.*, 1991), supporting that those distracting and recovering strategies are acquired in middle childhood.

In contrast, results on developmental changes in problem-focused coping are less consistent. Problem-focused coping strategies were used predominantly in children, ages 10 to 14 (Compas *et al.*, 1988), and

strategies such as direct action and support seeking have been found to be preferred by primary school children (Rossman, 1992; Ryan, 1989; Wertlieb *et al.*, 1987). Additionally, cognitive coping strategies such as cognitive restructuring and decision making have been shown to increase in number and variety from early to late primary school years (Ryan, 1989; Wertlieb *et al.*, 1987), and problem solving was increased in 4th graders compared to 5th, 7th, and 8th graders (Roecker *et al.*, 1996). Further changes in the development of problem solving were not demonstrated from middle childhood to adolescence, suggesting that problem-solving abilities are acquired during early childhood (Compas *et al.*, 1991). Studies in adolescents, which differentiated problem-focused coping in problem solving, representing active coping, and internal coping, such as cognitive restructuring, have confirmed the stability in problem solving (Donaldson *et al.*, 2000; Seiffge-Krenke, 1993). Seiffge-Krenke (1993) reported that cognitive restructuring showed developmental increases in middle and late adolescents, however, Donaldson *et al.* (2000) reported an increase in early and late adolescents but a decrease in middle adolescents. These results lend support to biphasic developmental changes in more complex cognitive strategies in childhood and adolescence. Thus, a 2nd peak during adolescence is suggested, indicating the maturation of meta-cognitive capacities.

Studies investigating age-dependent changes in avoidant coping have provided inconclusive results, partly due to different conceptualizations of this coping strategy such as confounding behavioral and cognitive avoidance (Fields and Prinz, 1997). Although research on further maladaptive coping strategies has been scarce, some evidence for significant increases in resignation and self-criticism among 9- to 14-year-old children and adolescents were found (Donaldson *et al.*, 2000), suggesting that early and middle adolescents have not developed comprehensive abilities to cope effectively with the high amount of stressors.

Fields and Prinz (1997) summarized the literature on developmental changes in self-reported coping across diverse stressful situations and drew the conclusion that the ability of differentiation and situation-specific use of coping strategies increases at first from preschool to primary school age with a 2nd peak in the adolescence. But several studies failed to show developmental differences, suggesting moderate consistencies of reported coping strategies across diverse stressors in different age groups (Donaldson *et al.*, 2000; Griffith *et al.*, 2000; Roecker *et al.*, 1996).

In this study it was hypothesized that the emotion-focused coping strategy "minimization" which referred to

internal coping, would show a developmental increase. In contrast, the emotion-focused coping strategy "distraction/recreation" which represented the employment of child-adequate distracting and recovering strategies was expected to decrease. Problem-focused coping strategies were hypothesized to be stable. Regarding developmental differences in maladaptive coping it was expected that resignation, rumination, and aggression would increase with age. Given the inconsistent findings on passive avoidance, no developmental differences were predicted. Finally, in respect to situation-specific coping it was suggested that the match between types of coping strategies and demands of stress domains would increase with age.

### *Gender Effects*

Studies have provided evidence that girls tend to cope with stressors by predominantly applying social support (Causey and Dubow, 1992; Dise-Lewis, 1988; Donaldson *et al.*, 2000; Frydenberg and Lewis, 1993; Patterson and McCubbin, 1987; Seiffge-Krenke, 1993). Emotion-focused coping, including strategies as relaxation, affective release, or emotional regulation, has been proved to be more employed by girls than boys (Compas *et al.*, 1988; de Anda *et al.*, 2000; Donaldson *et al.*, 2000). Utilization of maladaptive emotional regulating strategies such as emotional ventilation and drug intake was more frequently reported by girls (Dise-Lewis, 1988; Frydenberg and Lewis, 1993). Regarding to problem-focused coping, findings are inconsistent. Conversely, results support that girls employ more frequently maladaptive behavioral and cognitive strategies of coping. Thus, problem-avoidant coping (Seiffge-Krenke and Shulman, 1990) as well as resignation (Donaldson *et al.*, 2000) were enhanced in girls. Connor-Smith *et al.* (2000) mentioned that these gender effects could be explained by response tendencies and took these base rate differences into account by calculating proportional scores. In 2 studies examining coping with social stressors, female adolescents reported proportionately more emotional expression than male adolescents, but male adolescents scored higher on acceptance than female adolescents. These results suggest considering the response bias in future studies.

Overall, girls seem to employ more maladaptive coping strategies; according to Frydenberg and Lewis (1993) this can be interpreted as "perceived lack of empowerment." Seiffge-Krenke (1993) noted that the female coping style does not differ from the coping pattern shown by clinical samples, suggesting that girls are prone to develop mental disorders. Compas *et al.* (1993, p. 345) confirmed this assumption and hypothesized that the high incidence

of depression in girls can be explained by the use of emotionally attentive or ruminative coping strategies. In contrast, by using more emotion-distraction strategies which facilitate problem-focused coping, instrumental behavior, and a sense of control, boys are prone to develop externalizing behavioral problems. Thus, Compas *et al.* (1993) suggested that the higher incidence of externalizing behavioral problems in boys may be due to coping efforts that are intended to gain some degree of control over the demanding situation.

In this study it was expected that female children and adolescents would report less emotion-focused and more maladaptive coping than their male counterparts. Although the problem-focused coping strategy "support seeking" was hypothesized to be higher in girls than in boys, fewer positive self-instructions were expected to be reported by girls than boys. Given the inconsistent findings on problem-focused coping strategies representing situation control, no gender differences were predicted. Finally, with regard to gender differences in situation-specific coping patterns, it was suggested that male children and adolescents would cope more specifically with interpersonal and academic stressors than their female contemporaries.

### *Interaction Effects*

Although few studies investigated the interaction effect of age by gender on coping, consistent findings have demonstrated maladaptive coping patterns in girls aged 11–14, supporting the assumption that girls in early adolescence are a high-risk population for the development of psychological malfunctioning (Compas *et al.*, 1993; Kraaij *et al.*, 2003; Nolen-Hoeksema *et al.*, 1991; Petersen *et al.*, 1991; Seiffge-Krenke, 1993; Seiffge-Krenke and Stemmler, 2002). In this study the age groups were operationalized by school grades; late children attended the 3rd and 4th grade, early adolescents the 5th and 6th grade, and middle adolescents the 7th grade. It was hypothesized that girls in early adolescence compared to girls in late childhood and middle adolescence would show a maladaptive coping pattern. Furthermore, it was expected that early adolescent girls would score lower on adaptive and higher on maladaptive coping strategies than early adolescent boys.

In sum, this study examined gender and developmental differences in coping strategies in 3 age groups (late childhood, early, and middle adolescence). In addition, situation-specific coping was investigated. Specifically, gender and age effects on coping with 2 stress domains (interpersonal and academic stressors) were examined.

## METHOD

### Participants and Procedure

Participants were recruited in 21 schools with a total of 80 classes from 3 different states in Germany including cities as well as rural areas. The sample consisted of 1,123 children and adolescents ranging in age from 8 to 14 years ( $M = 10.76$ ,  $SD = 1.58$ , 526 males, 597 females). Reflecting important academic transitions, participants were subdivided into late childhood comprising 3rd and 4th graders who attended elementary schools ( $n = 409$ , 206 males, 203 females), early adolescence consisting of 5th and 6th graders who attended junior high schools and were educated in preparation classes to be selected by academic achievement ( $n = 413$ , 182 males, 231 females), middle adolescence including 7th graders who attended classes in junior high schools with the same level of academic achievement ( $n = 301$ , 138 males, 163 females). The students investigated were German native speakers and were representative for German children and adolescents. Parents of participants were asked to complete a questionnaire on socioeconomic status, showing the following frequencies in academic qualification ( $N = 789$ , mother, M, father, F): without school-leaving qualification (M: 0.8%, F: 1.5%), low and middle qualification (M: 58.8%, F: 49.5%), qualification for technical college (M: 10.4%, F: 11.5%), high-school graduation (M: 25.9%, F: 28%), and missing data (M: 5%, F: 11%).

Participants and their parents gave their written informed consent prior to the start of the study. Children and adolescents were asked to complete the measures in their classes. Measures were administered by trained undergraduate and graduate students in psychology.

### Measures

Coping styles were measured using the German Coping Questionnaire for Children and Adolescents (*Stressverarbeitungsfragebogen für Kinder und Jugendliche*, SVF-KJ) developed by Hampel *et al.* (2001). Coping responses were answered in relation to 2 individually generated common stressors: an interpersonal stress situation exemplary described by a conflict with peers or malicious gossip expressed by peers, and an academic stress situation exemplified by taking a difficult exam or dealing with too much homework. The following 9 different coping strategies were assessed: minimization, distraction/recreation, situation control, positive self-instructions, social support, passive avoidance, rumination, resignation, and aggression. Each subscale was

**Table I.** Subscales and Items of the German Coping Questionnaire for Children and Adolescents (SVF-KJ)

Abb.	Item
01 MIN	1... I say to myself: It isn't so serious! (04/40)
	2... I keep in mind: It isn't a big deal! (11/47)
	3... I say to myself: It isn't as bad as all that! (26/62)
	4... I keep in mind: Life will be better tomorrow! (34/70)
02 DIS	1... I imagine something really funny! (01/37)
	2... I'm reading something, that's fun! (18/54)
	3... I'm playing something! (25/61)
	4... First, I'm going to make myself comfortable! (30/66)
03 STC	1... I'm making a plan to fix the problem! (03/39)
	2... I try to figure out, what the problem is! (16/52)
	3... I'm wondering what to do! (20/56)
	4... I'm doing something to fix the problem! (31/67)
04 POS	1... I say to myself: I know, I can solve the problem! (06/42)
	2... I say to myself: I'll get that under control! (12/48)
	3... I assure myself: I can bring it to a good end! (23/59)
	4... I say to myself: I can make it! (36/72)
05 SOS	1... I'm letting somebody help me! (09/45)
	2... I'm asking for somebody's advice! (14/50)
	3... I'm asking somebody, what to do! (22/58)
	4... I'm talking to somebody about that! (28/64)
06 PAV	1... I'd like to get out of it! (02/38)
	2... I'd like to stay in bed! (13/49)
	3... I'd like to stay away from the situation! (19/55)
	4... I'd like to pretend to be ill! (35/71)
07 RUM	1... It's hard for me to think of anything else! (08/44)
	2... the situation rushes into my mind over and over again! (15/51)
	3... I keep on worrying and thinking about the situation! (24/60)
	4... my thoughts are revolving only around that thing! (32/68)
08 RES	1... I keep in mind: Whatever I do is really useless! (05/41)
	2... I want to give up! (10/46)
	3... Everything I do is senseless! (27/63)
	4... I keep on thinking: It's really pointless! (33/69)
09 AGG	1... I start quarrelling with somebody, who bumped into me! (07/43)
	2... I'm getting a bad temper! (17/53)
	3... I'd like to explode! (21/57)
	4... I'm grumbling about everything! (29/65)

*Note:* Numbers in brackets indicate the item number of the interpersonal and academic stressful encounter, respectively. Abbreviations of subscales: MIN = Minimization; DIS = Distraction/Recreation; STC = Situation control; POS = Positive self-instructions; SOS = Social support; PAV = Passive avoidance; RUM = Rumination; RES = Resignation; AGG = Aggression.

represented by 4 items, resulting in 36 different coping responses for each stress domain (see Table I). Items were rated on a 5-point Likert scale measuring the likelihood for each coping response employed. Responses were verbally labeled ranging from *not at all* (0) to *in any case* (4). Cross-situational coping was obtained by calculating mean scores across data of coping with both stress domains.

Item assignment to subscales for each stress domain and cross-situational coping was confirmed by results of principal component factor analyses. Principal component factor analyses conducted on the 9 subscales of the SVF-KJ for each stress domain and cross-situational

coping provided 3 higher-order factors with Eigenvalues greater than 1.00, respectively. Two of the 3 factors which emerged from the factor analyses represented 5 adaptive coping strategies: emotion-focused coping (minimization and distraction/recreation) and problem-focused coping (situation control, positive self-instructions, and social support). Additionally, the 3rd factor emerging consisted of the 4 maladaptive coping strategies "passive avoidance," "rumination," "resignation," and "aggression." These 3 higher-order factors explained 63% of the total variance for interpersonal stressors, 65% for academic stressors, and 67% for cross-situational coping.

**Table II.** Factor Loading Matrix<sup>1</sup> of Principal Component Analysis with a Varimax Rotation on the 9 Subscales of the SVF-KJ ( $N = 1,123$ )

Subscale	F1	F2	F3	$h^2$	$a_1^2/h^2$	$a_2^2/h^2$	$a_3^2/h^2$
Minimization	-.23	.00	<b>.75</b>	.62	.09	.00	<b>.91</b>
Distraction/recreation	.01	.22	<b>.81</b>	.71	.00	.07	<b>.92</b>
Situation control	-.18	<b>.87</b>	.00	.78	.04	<b>.97</b>	.00
Positive self-instructions	<b>-.53</b>	<b>.63</b>	.28	.76	.37	<b>.52</b>	.10
Social support	.14	<b>.75</b>	.01	.59	.03	<b>.95</b>	.00
Passive avoidance	<b>.84</b>	-.00	.00	.71	<b>.99</b>	.00	.00
Rumination	<b>.65</b>	.31	-.44	.71	<b>.60</b>	.14	.27
Resignation	<b>.82</b>	-.24	.01	.73	<b>.92</b>	.08	.00
Aggression	<b>.63</b>	-.01	-.20	.44	<b>.90</b>	.00	.09
Eigenvalue <sup>2,3</sup>	3.12	1.71	1.22				
Percent of explained variation <sup>2</sup>	34.68	18.99	13.54	67.20			

Note: <sup>1</sup>Factor loadings with  $.40 \leq a < .50$  are underlined, loadings with  $a \geq .50$  are bolded.

<sup>2</sup>Eigenvalues and explained variances for the unrotated factor loading matrix. <sup>3</sup> Further Eigenvalues: 0.77, 0.62, 0.52.  $h^2$  = Communality,  $a^2/h^2$  = relative proportion of each loading at the communality.

The factor loading matrix for the cross-situational coping is depicted in Table II. This 3-factor solution was confirmed by the Scree test as well as the parallel analysis by Horn (1965). Coefficients of congruency for the 3 factors were .99, .99, and .98, indicating a stable factorial structure. This 3-factor solution was also confirmed when performing age and gender-specific analyses. Moderate correlation with trait anxiety and personality dimensions such as neuroticism and extraversion, indicated the construct validity.

Item and subscale analyses revealed Cronbach alphas from .62 to .82 (mean  $\alpha = .70$ , Fisher's  $z$ -transformed) for interpersonal stressors, from .63 to .88 (mean  $\alpha = .75$ ) for academic stressors, and from .71 to .89 (mean  $\alpha = .79$ ) for cross-situational coping, indicating adequate internal consistencies for situation-specific and cross-situational subscales.

## RESULTS

To investigate age and gender effects on coping strategies multivariate analyses of variance (MANOVAs) on cross-situational raw scores were carried out. Effects on the 9 subscales were detected by univariate analyses of variance (ANOVAs). To take response tendencies into account, analyses were also performed using proportional scores (Connor-Smith *et al.*, 2000). Age and gender effects on situation-specific coping strategies were examined by conducting analyses of variance for repeated measurements (ANOVAs) on situation-specific raw scores. With regard to multiple tests, only results of univariate analyses with  $p < .01$  are considered.

## Age and Gender Effects

MANOVAs were conducted to examine the different utilization of coping strategies. Initially, MANOVAs on cross-situational coping were calculated to explore the main effects for the age group (late childhood, early, and middle adolescence) and gender. With regard to developmental differences, the MANOVA yielded a significant main effect (Wilks's  $F(18, 2224) = 9.31, p < .001$ ). Univariate ANOVAs revealed a significant main effect of the age group for the emotion-focused coping strategy "distraction/recreation" (see Table III). In post hoc Student's  $t$  tests, all simple comparisons were statistically significant, indicating a developmental decrease from late childhood to middle adolescence (3/4 vs. 5/6:  $t(788) = 6.89, p < .001$ ; 3/4 vs. 7:  $t(705) = 8.98, p < .001$ ; 5/6 vs. 7:  $t(712) = 2.67, p = .008$ ). Furthermore, age effects on the maladaptive coping strategies "rumination," "resignation," and "aggression" were found. Post hoc Student's  $t$  tests showed that children scored significantly lower on rumination and aggression than both adolescent groups (rumination: 3/4 vs. 5/6:  $t(820) = -3.66, p < .001$ ; 3/4 vs. 7:  $t(616) = -2.36, p = .019$ ; aggression: 3/4 vs. 5/6:  $t(803) = -3.76, p < .001$ ; 3/4 vs. 7:  $t(708) = -4.79, p < .001$ ). Middle adolescents reported significantly less resignation than the both younger age groups (3/4 vs. 7:  $t(708) = 4.13, p < .001$ ; 5/6 vs. 7:  $t(712) = 2.67, p = .008$ ). All results were confirmed by analyses of variance on proportional scores.

For gender, a significant main effect emerged (Wilks's  $F(9, 1113) = 11.53, p < .001$ ). Univariate ANOVAs revealed a significant gender main effect on the emotion-focused coping strategies "minimization" and

**Table III.** Means (*M*) and Standard Deviations (*SD*) for Coping Strategies by Age Group and Gender and Summary of ANOVA Results

Scale	Grade level												Factor		
	Male						Female						<i>F</i>		
	3/4		5/6		7		3/4		5/6		7		Age group	Gender	Age group by gender
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
MIN	2.12	(.75)	2.03	(.70)	2.03	(.67)	1.98	(.62)	1.88	(.68)	1.98	(.65)	2.53	9.27**	2.96*
DIS	2.25	(.90)	1.85	(.76)	1.67	(.66)	2.09	(.80)	1.75	(.66)	1.64	(.68)	46.09***	7.66**	19.94***
STC	2.71	(.75)	2.59	(.77)	2.62	(.71)	2.66	(.69)	2.66	(.70)	2.72	(.69)	0.60	0.60	0.86
POS	2.78	(.71)	2.74	(.73)	2.67	(.70)	2.62	(.68)	2.53	(.78)	2.69	(.65)	1.26	10.34***	3.41**
SOS	2.27	(.94)	2.22	(.91)	2.08	(.90)	2.51	(.79)	2.60	(.90)	2.53	(.93)	1.33	41.82***	9.42***
PAV	1.50	(.80)	1.55	(.91)	1.38	(.83)	1.60	(.80)	1.69	(.82)	1.56	(.80)	2.91	7.77**	2.73*
RUM	1.59	(.80)	1.74	(.88)	1.71	(.83)	1.91	(.81)	2.14	(.89)	2.06	(.90)	6.88***	52.17***	12.91***
RES	1.07	(.68)	0.96	(.70)	0.96	(.72)	1.25	(.64)	1.20	(.75)	0.94	(.68)	8.12***	11.30***	7.11***
AGG	1.07	(.66)	1.15	(.74)	1.31	(.75)	1.11	(.67)	1.38	(.79)	1.37	(.68)	12.16***	8.19***	7.13***

Note: Abbreviations of subscales see Table I.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

“distraction/recreation.” With regard to problem-focused coping, the analysis failed to show a significant gender main effect for situation control, but the subscales “positive self-instructions” and “support seeking” were significantly affected by gender. Moreover, all gender main effects on maladaptive coping strategies were significant. Thus, girls showed significantly decreased adaptive coping strategies (minimization, distraction, and positive self-instructions) than boys. Moreover, girls scored significantly higher on support seeking and on maladaptive coping strategies. Except for the gender effect on passive avoidance, all results were confirmed by analyses of variance on proportional scores, indicating that the gender difference in passive avoidance obtained by using raw scores was biased by a higher response tendency of girls.

Because MANOVAs revealed main effects of age group and gender, an additional MANOVA was performed to determine the interaction effect of age group by gender. Thereby, a significant interaction effect was found (Wilks's  $F(45, 4964) = 6.42, p < .001$ ). Univariate ANOVAs yielded significant interaction effects for the emotion-focused coping strategy “distraction/recreation,” the problem-focused coping strategies “positive self-instructions” and “support seeking,” as well as the maladaptive coping strategies “rumination,” “resignation,” and “aggression.” Post hoc Student's  $t$  tests revealed that interaction effects were mostly explained by females in early adolescence. Thus, girls in the early adolescence used less distraction than female children and employed less positive self-instructions than female middle adolescents ( $tDIS(393) = 4.78, p < .001$ ;  $tPOS(392) = -2.10, p = .036$ ). With regard to maladaptive coping strategies, early adolescent girls reported more rumination and ag-

gression than female children ( $tRUM(432) = -2.89, p = .004$ ;  $tAGG(432) = -3.81, p < .001$ ). In contrast, early adolescent girls applied more resignation than female middle adolescents ( $tRES(392) = 3.57, p < .001$ ). Moreover, compared to their male contemporaries, girls in the early adolescence scored lower on minimization and positive self-instructions, but reported more support seeking, rumination, resignation, and aggression ( $df = 411$ ;  $tMIN = 2.18, p = .029$ ;  $tPOS = 2.78, p = .006$ ;  $tSOS = -4.21, p < .001$ ;  $tRUM = -4.62, p < .001$ ;  $tRES = -3.32, p = .001$ ;  $tAGG = -3.00, p = .003$ ). In respect to male coping strategies, middle adolescent boys scored lower on distraction/recreation and higher on aggression than male children ( $tDIS(339) = 6.84, p < .001$ ;  $tAGG(342) = -3.11, p = .002$ ). All results were confirmed by analyses of variances on proportional scores.

### Situation-Specific Coping

Analyses of variance for repeated measurements (ANOVAs) on the situation-specific coping strategies using the stress domain as within-subject factor revealed a significant main effect of situation for the problem-focused coping strategies “situation control” ( $F(1, 1122) = 34.33, p < .001$ ) and “support seeking” ( $F(1, 1122) = 18.98, p < .001$ ) as well as for the maladaptive coping strategies “passive avoidance” ( $F(1, 1122) = 15.12, p < .001$ ), “rumination” ( $F(1, 1122) = 58.68, p < .001$ ), and “aggression” ( $F(1, 1122) = 79.80, p < .001$ ). Children and adolescents employed more situation control, passive avoidance, rumination, and aggression on interpersonal stressors than on academic stressors. In contrast, participants reported

more support seeking on academic stressors than on interpersonal stressors.

ANOVAs using the stress domain as within-subjects factor and the age group or gender as between-subjects factor were performed to investigate the developmental and gender differences in situation-specific coping. Analyses revealed significant interactions of the stress domain by age group for the problem-focused coping strategy "support seeking" ( $F(2, 1120) = 6.02, p = .003$ ) and the maladaptive coping strategy "passive avoidance" ( $F(2, 1120) = 6.82, p = .001$ ). Post hoc Student's paired  $t$  tests showed that children did not differ in situation-specific scores of support seeking. In contrast, situation-specific support seeking of both adolescent groups differed significantly, indicating that adolescents used more support seeking on academic stressors than on interpersonal stressors (5/6:  $M_{\text{interpersonal}} = 2.38, SD = 0.98; M_{\text{academic}} = 2.49, SD = 0.99; t(412) = -3.21, p = .001$ ; 7:  $M_{\text{interpersonal}} = 2.22, SD = 0.98; M_{\text{academic}} = 2.42, SD = 1.06; t(300) = -4.40, p < .001$ ). For passive avoidance, middle adolescents did not differ in situation-specific coping scores, but both younger age groups employed significantly more passive avoidance on interpersonal stressors than on academic stressors (3/4:  $M_{\text{interpersonal}} = 1.64, SD = 0.87; M_{\text{academic}} = 1.46, SD = 0.91; t(408) = 4.85, p < .001$ ; 5/6:  $M_{\text{interpersonal}} = 1.66, SD = 0.85; M_{\text{academic}} = 1.59, SD = 1.01; t(412) = 2.08, p < .038$ ).

Furthermore, ANOVAs yielded a significant interaction of the stress domain by gender for the emotion-focused coping strategy "minimization" ( $F(1, 1121) = 5.53, p = .019$ ), which failed to reach significance after correcting the alpha level. In addition, ANOVAs conducted to investigate interaction effects of age by gender on situation-specific coping did not ascertain any higher interaction effects.

## DISCUSSION

This study was mainly aimed to investigate effects of gender and age on coping with common stressors in 3 age groups (late childhood, early, and middle adolescence). The further aim of this study was to clarify gender and developmental differences in situation-specific coping with 2 stress domains: interpersonal and academic stress. Therefore, 8- to 14-year-old children and adolescents were asked to complete the German Coping Questionnaire for Children and Adolescents designed by Hampel *et al.* (2001), which assessed 9 coping strategies representing the coping styles "emotion-focused coping," "problem-focused coping," and "maladaptive cop-

ing." Previous studies in children and adolescents provided some evidence for the validity of comparable coping styles, demonstrating significant associations with psychological functioning (e.g., Seiffge-Krenke, 1993, 2000).

## Age and Gender Effects

### Age Effects

As predicted, the emotion-focused coping strategy "distraction/recreation" decreased with age, reflecting that these child-type distracting strategies were more frequently employed in childhood than in adolescence. This finding is congruent with results previously found in a sample of 9- to 14-year-old children and adolescents (Spirito *et al.*, 1991). Furthermore, it confirms results presented by Donaldson *et al.* (2000) who also demonstrated a significant decrease in distraction from early to middle adolescence, comprising ages 9 to 14 years. Conversely, age groups did not differ in the 2nd emotional regulating strategy "minimization." Thus, this finding is not in line with recent results, showing increases in emotional regulating coping with age (Compas *et al.*, 1993). However, studies investigating children and adolescents of the same age, also failed to find developmental changes in similar coping strategies such as wishful thinking (Donaldson *et al.*, 2000) and distancing (Roecker *et al.*, 1996). In contrast, maladaptive coping strategies such as rumination and aggression which are often classified as emotional regulating strategies showed developmental increases in this study. These results are in good agreement with former findings reported by Donaldson *et al.* (2000) and lend support to the assumption that inconsistent findings on emotion-focused coping are partly due to different conceptualizations of this coping style.

Developmental changes were not observed in problem-focused coping. This result confirms previous findings which have demonstrated a stability in problem solving during late childhood and adolescence (Causey and Dubow, 1992; Compas *et al.*, 1988; Donaldson *et al.*, 2000; Seiffge-Krenke, 1993; Wertlieb *et al.*, 1987). Additionally, the lack in age differences in support seeking is consistent with the literature (Causey and Dubow, 1992; Roecker *et al.*, 1996; Seiffge-Krenke, 1993). Finally, although developmental changes in positive self-instructions have been widely neglected in recent research, present findings support that this problem-focused coping strategy also shows a stability from late childhood to middle adolescence. In sum, results confirm the assumption that capacities in problem solving, support seeking and positive self-instructions are acquired in early childhood.



Similar to other findings, passive avoidance when operationalized only by behavioral avoidant coping did not show developmental changes (Herman-Stahl *et al.*, 1995; Seiffge-Krenke, 1993). In some studies showing developmental decreases, this coping strategy was assessed by different strategies such as escape pointing to the suggestion that contradictory findings may be explained by methodological differences. Unexpected results on resignation, showing decreased resignation in middle adolescents while the maladaptive coping strategy "rumination" was increased, may be interpreted in terms of a reduced aspiration level. Possibly, middle adolescents tend to cope with common stressors utilizing ruminating behavior, but negative emotional outcomes are prevented by a reduced aspiration level.

Overall, present findings, indicating decreases in distraction/recreation and increases in maladaptive coping strategies with increasing age put emphasis on the lack in coping capacities of early and middle adolescents. This conclusion is in accordance with recent research, supporting impaired coping capacities in 11- to 14-year-old children and adolescents (Causey and Dubow, 1992; de Anda *et al.*, 1997; Donaldson *et al.*, 2000; Spirito *et al.*, 1991). Taking into consideration that early adolescence is a developmental period characterized by increasing amounts of normative stressors (Compas *et al.*, 1993; Patterson and McCubbin, 1987; Seiffge-Krenke, 1993, 2000), the maladaptive coping patterns shown in this study support that early adolescents are a high risk population for the development of psychological malfunctioning. Thus, on the basis of these results the necessity of preventive programs in late childhood and early adolescence is supported.

### Gender Effects

Maladaptive coping patterns in female children and adolescents found in this study are congruent with previous research (Causey and Dubow, 1992; de Anda *et al.*, 2000; Dise-Lewis, 1988; Donaldson *et al.*, 2000; Frydenberg and Lewis, 1993; Seiffge-Krenke, 1993). These maladaptive coping patterns in girls were characterized by the decreased emotional regulating strategies "minimization" and "distraction/recreation" and the decreased problem-focused coping strategy "positive self-instructions" whereas the maladaptive coping strategies "rumination," "resignation," and "aggression" were increased. Thereby, these results were not explained by different response sets. In contrast, increases in the problem-focused strategy "support seeking" in girls were found, confirming recent results (Causey and Dubow, 1992; Dise-Lewis, 1988; Donaldson *et al.*, 2000;

Frydenberg and Lewis, 1993; Patterson and McCubbin, 1987; Seiffge-Krenke, 1993). This finding supports the assumption that girls tend to cope with stressors utilizing their social resources (Nolen-Hoeksema *et al.*, 1991). Moreover, on the basis of the finding in this study that girls did not differ from boys in the use of situation control, it can be suggested that girls are characterized by increased behavioral coping efforts resulting in an inefficient balance between efforts and costs of coping (Roth and Cohen, 1986). Considering that studies have also shown that girls scored lower on outcome expectancies of their coping strategies than boys and reported more somatic stress responses than their male counterparts (de Anda *et al.*, 1997; Reynolds *et al.*, 2001; Seiffge-Krenke, 1993), it can be concluded that girls are prone to develop psychological malfunctioning.

### Interaction Effects

As compared to male contemporaries early adolescent girls scored lower on adaptive and higher on maladaptive coping strategies. In accordance with previous findings (Compas *et al.*, 1993; Seiffge-Krenke, 1993), present results indicate that early adolescent girls are prone to cope maladaptively with common stressors. Some researchers have drawn the conclusion that due to their coping patterns early adolescent girls are a high risk population for the development of internalizing behavioral problems (e.g., Nolen-Hoeksema *et al.*, 1991; Petersen *et al.*, 1991). Steinhausen and Winkler Metzke (2001) recently found that active coping was a protective factor and passive coping a risk factor for internalizing disorders in 10- to 17-year-old children and adolescents. Similarly, Compas *et al.* (2002) demonstrated that secondary control coping (e.g., positive thinking, distraction) was associated with fewer anxiety/depression symptoms, whereas involuntary coping (e.g., rumination) was related to more anxiety/depression symptoms. These results confirmed previous findings in longitudinal studies, indicating that avoidant coping behavior was significantly related to depressive symptoms (Herman-Stahl *et al.*, 1995; Seiffge-Krenke and Klessinger, 2000; Seiffge-Krenke and Stemmler, 2002). Thus, on the basis of the present results, indicating decreased adaptive coping strategies (positive self-instructions, distraction) and increased maladaptive coping strategies (e.g., resignation, rumination) among early adolescent girls, the hypothesis regarding an increased likelihood for this population to develop depressive symptoms is strengthened (Compas *et al.*, 1993; Petersen *et al.*, 1991; Seiffge-Krenke, 1993). In contrast, middle adolescent boys were shown to respond

on common stressors by utilizing aggression. This result is congruent with the literature and supports previously shown associations of expressive coping behaviors and externalizing behavioral problems (Compas *et al.*, 1993). Conclusively, present results provide some evidence for gender-specific conceptualizations of preventive programs, focusing on acquisition of adaptive coping strategies such as distraction or positive self-instructions in girls, and acquisition of prosocial behavior in boys.

### Situation-Specific Coping

On the basis of the previous results, it was assumed that interpersonal stressors are perceived as more uncontrollable and would elicit more emotion-focused coping, whereas academic stressors are perceived as more controllable and would evoke more problem-focused coping (Causey and Dubow, 1992; Compas *et al.*, 1988). In accordance with these results, children and adolescents of this study employed significantly more support seeking on academic stressors than on interpersonal stressors. In contrast, both emotion-focused coping strategies did not show situational differences. These results are similar to those of Roecker *et al.* (1996), showing a situation-independent use of avoidant (or emotional regulating) coping strategies on the perceived controllability of stressors but a higher employment of approach (or problem-focused) coping in response to controllable stressors. However, the contradictory finding on situation control, showing to be more endorsed on interpersonal stressors than on academic stressors, is not supported by the literature.

In accordance with previous results, effects of age and gender on situation-specific coping were sparse (Griffith *et al.*, 2000; Roecker *et al.*, 1996). Consistent with the hypothesis of an improved situational differentiation with increasing age, early and middle adolescents applied more support seeking on academic stressors than on interpersonal stressors, whereas late children did not show situation-specific coping. Unexpectedly, inverse findings were found for passive avoidance, pointing to the assumption that younger children use avoidant coping strategies in dependence on situational demands. With respect to gender effects, results did not confirm the hypothesis of an enhanced situational differentiation in boys. These weak effects of age and gender on situation-specific coping may be explained by the similarity in perceived controllability of both stressors. Roecker *et al.* (1996) investigating different interpersonal conflicts found that adult conflict situations were perceived as more uncontrollable than peer stressors. Thus, age and gender effects on situation-specific coping might be found when coping

with academic stressors is compared to coping with adult or family conflict situations.

### Limitations and Final Conclusions

Although replicating previous findings on coping among children and adolescents some limitations are apparent. First, on the basis of the sample examined in this study, findings are restricted on coping in the European culture. Despite few cross-cultural studies revealed similar results on coping behavior in North American, Australian, and European samples (e.g., Frydenberg *et al.*, 2003; Seiffge-Krenke and Shulman, 1990), cultural differences cannot be ruled out. Second, coping strategies were assessed by a self-report questionnaire, but other informants were not included. However, studies have found that self-report measures were significantly correlated with peer-report measures (Causey and Dubow, 1992) as well as parents' reports (Connor-Smith *et al.*, 2000). Moreover, covert processes such as emotional and cognitive coping are assumed to be adequately measured by self-report methodology (Roecker *et al.*, 1996; Seiffge-Krenke, 2000). Third, important moderating factors such as control- and value-related appraisals or outcome expectancies, which were neglected in this study, have to be acknowledged in future studies to improve the understanding of age and gender effects on situation-specific coping.

Conclusively, results support the multidimensional operationalization of coping. Thereby, inconsistent findings of studies examining effects of age and gender on dichotomized coping styles can be partly explained by methodological differences. Furthermore, by applying this multidimensional approach on evaluation, coping patterns, whose clinical relevance has been shown can be detected (Donaldson *et al.*, 2000). Thus, more specific assessments of individual resources and deficits in coping skills, better adjustments of intervention programs to diagnosed coping patterns, and more comprehensive evaluations of intervention programs are available. Finally, findings warrant further investigations of interaction effects of age and gender on coping strategies. Thereby, female early adolescents were identified as a risk population who should be specifically supported by preventive mental health care.

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